

# Section 1

## OVERVIEW OF PROCESS IMPROVEMENT

Adopting the philosophy of TQM requires each of us to make a shift in how we look at the work we do. Too often, we focus only on those things we are directly involved in and never stop to ask ourselves, "Is this the right thing to do or the right way to do it?"

TQM asks us to do just that - **every day**. It asks us to challenge our basic assumptions about how we do our jobs. We must look at ways we can continually improve our individual efforts, to add increased value to the process, and satisfy our customers.

To improve any work process we must:

- ✓ **Clearly define the current work process**
- ✓ **Measure the process's effectiveness and efficiency**
- ✓ **Determine if it is a stable/unstable process**
- ✓ **Avoid "tampering" with the process**
- ✓ **Eliminate "special" causes of variation in the process**
- ✓ **Reduce "common" causes of variation in the process**
- ✓ **Continually look for improvement opportunities**

This chapter presents some useful models and techniques for taking a systematic approach to process improvement. They will help you discover both what is the right thing to do and the right way to do it. They will help you tap into your biggest improvement resource - *your customer!*

The rest of the Process Improvement Guide will present information and tools to help you collect and gather data, convert that data into useful decision-making information, and work together more efficiently and effectively on your improvement or problem-solving projects.

For most Quality experts, taking a systematic approach to process improvement begins with the PDCA (Plan, Do, Check, Act) Cycle developed by Dr. Walter A. Shewhart. The goal of progressing through each step of the cycle is to achieve Quality of goods, products, services, or information - **as defined by the customer!**

There are many definitions of Quality:

**"Fitness for use"**

JOSEPH JURAN

**"Whatever the buyer says it is"**

A.V. FEIGENBAUM

**"Right Things Right"**

ODI\*

**"Zero defects, conformance to requirements"**

PHILLIP CROSBY

**"Predictable uniformity, dependability at low cost, suited to market."**

W. EDWARDS DEMING

**"The totality of features and characteristics of a product that bear on its ability to satisfy a given need."**

AMERICAN SOCIETY OF QUALITY CONTROL

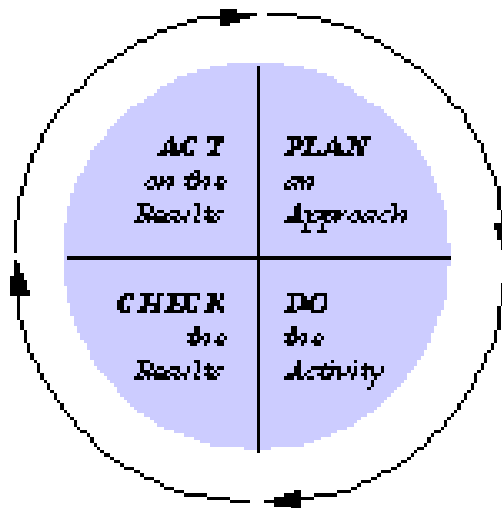
Whatever YOUR definition of Quality, you cannot achieve Quality without improving your processes. Improving processes requires a patient, systematic approach. Each step builds on the one before it, reinforcing the information obtained and allowing you to develop a "doable" action plan.

\*ODI - **Organizational Dynamics, Inc** - The initial TQM implementation consultant and trainer for the Coast Guard. Their Quality Blueprint, FADE problem-solving model, and other key concepts are presented here since many Coast Guard members may be familiar with them or have received some initial training in their use.

## THE SHEWHART CYCLE (PDCA or Deming Cycle)

### What it is:

The Shewhart Cycle provides us with a systematic approach to achieving continuous improvement. It is represented graphically as a circle or wheel because it involves repeating the steps over and over in a continuous effort to improve your processes. The circle has four quadrants: PLAN, DO, CHECK and ACT.



### How to use it:

To use the Shewhart Cycle properly, follow the five steps listed below.

**Plan a quality improvement.** Study your current work process and available data. Decide what you want to do and how best to do it.

**Do the activity planned.** Put your improvement or problem-solving plan into effect. Train and equip those responsible for accomplishing the task.

**Check the results.** Measure the results of your actions. Analyze your data.

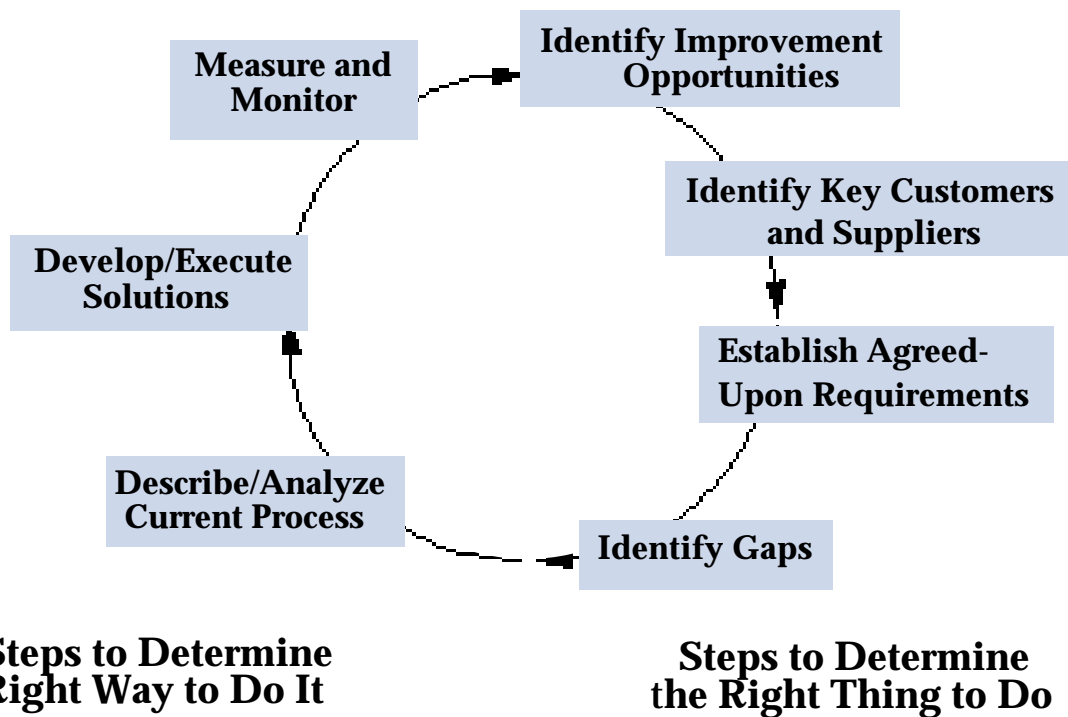
**Act on the results.** If the effort was truly an improvement, standardize and document it. If it wasn't successful, abandon the plan or adjust it as needed to overcome any identified weaknesses or problems.

**Repeat.** Using your data and lesson learned, continue around the cycle again by planning and carrying out further process improvement activity.

## THE QUALITY BLUEPRINT

### What It Is:

A model for process improvement, the Quality Blueprint examines both what you do and how you do it. By following the steps below in sequence, you help ensure suppliers, customers and participants in your work processes are all included in your efforts to continuously improve. Following the Quality Blueprint helps prevent the all too natural tendency to jump to solutions prior to really understanding a problem or its root causes.



### How to Use It:

The Quality Blueprint will allow you to decide what area you should focus your improvement efforts in, what customers and suppliers you need to establish product, service or information requirements with, and how your current process will (or will not) allow you to meet those requirements. It walks you through the improvement cycle. More information on the individual steps in this cycle is provided on the following pages.

## THE RIGHT THING

### Identify opportunity:

- ⇒ Listen to your customers
- ⇒ Look at current measures
- ⇒ Identify avoidable costs
- ⇒ Identify non-value added steps
- ⇒ Set Priorities

### Identify key customers and suppliers

- ⇒ Ask, "Who gets my output?"
- ⇒ Ask, "Whose inputs do I need?"
- ⇒ Determine your critical customers/suppliers

### Establish Agreed-Upon Requirements

- ⇒ Ask your customers:  
What do you need from me?  
What do you do with it?  
Are there any gaps?
- ⇒ Set priorities for action

### Identify Gaps

- ⇒ Identify gaps in current process
- ⇒ What data do you need/have to verify gaps exist?

## THE RIGHT WAY

### Describe current process

- ⇒ Flowchart your current process
- ⇒ Look for bottlenecks
- ⇒ Identify non-value added steps
- ⇒ Look for root causes

### Develop/Execute Solutions

- ⇒ Generate alternatives
- ⇒ Validate feasibility
- ⇒ Develop an Action Plan
- ⇒ Implement solution

### Measure/Monitor Results

- ⇒ Establish measures
- ⇒ Establish feedback systems
- ⇒ Document results
- ⇒ Continue improvement activity

***The Quality Blueprint will help you keep a process-focused view of Quality improvement and will allow you to better meet your current customer needs while at the same time building a stronger customer-supplier chain for future efforts.***

## THEFADEPROBLEM-SOLVINGPROCESS

### What It Is:

A four step problem-solving model, the FADE process can be useful for individuals, Quality Action Teams (QAT), Natural Workgroups (NWG), or others who have been tasked with developing solutions to a problem.

### **FOCUS: Choose a problem**

- Generate a list of problems
- Select ONE problem
- Verify and define that problem

### **ANALYZE: Learn about the problem**

- Decide what you need to know
- Collect data - baselines and patterns
- Determine root causes and most influential factors

### **DEVELOP: Create a solution**

- Generate a list of promising solutions
- Select ONE solution
- Develop an implementation plan

### **EXECUTE: Implement, monitor, adjust**

- Gain necessary commitment to your plan
- Execute your plan
- Monitor the impact(s)

### How to Use It:

FADE requires you to properly complete the outputs required by each step before you move on to the next. Failure to do so can doom your attempt to solve a problem or minimize the quality of recommended solutions. You **must** collect and properly analyze appropriate types and amounts of data during each step..

## REQUIRED OUTPUTS FOR F.A.D.E. PROCESS

### FOCUS - A written problem statement detailing:

- . The current state of your process (What is happening now)
- . The negative impacts of that state (Why change is needed)
- . Your desired state (What you want to happen)
- . The impacts of achieving your desired state (Benefits)

### ANALYZE - Verified problem statement/list of "root" causes

- . A flowchart of your **current** work process
- . A list of "root" causes for problems/gaps identified

### DEVELOP - List of proposed solutions/Action Plan

- . List of recommended solutions
- . Action Plan to implement your solutions
- . Who, What, When, Where, Why and How of your plan
- . Appropriate documentation to explain/justify recommendations

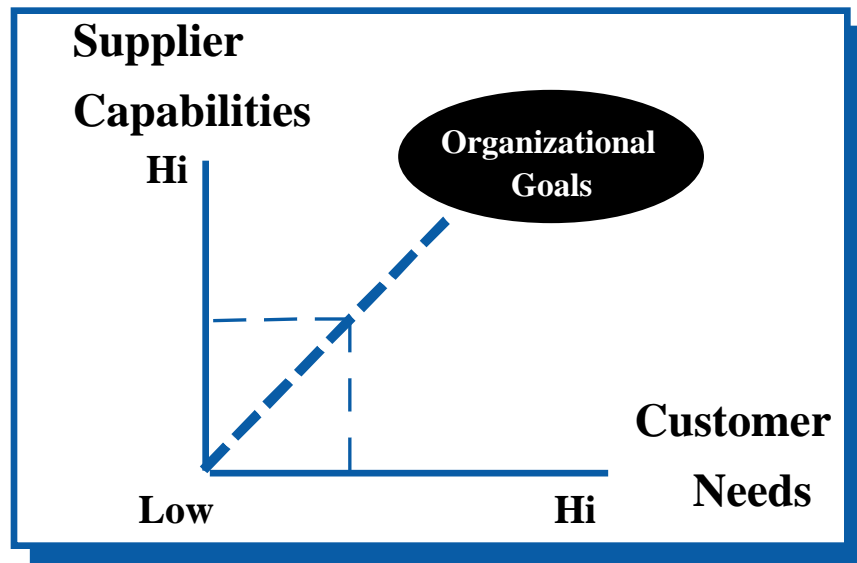
### EXECUTE - Process and Results Measures

- . Measures of process efficiency/effectiveness
- . Data collection/monitoring plan

## OTHER KEY QUALITY CONCEPTS

**ALIGNMENT:** Matching your capabilities/customer needs with organizational goals

Alignment can be achieved by meeting with your customer, establishing agreed-upon performance requirements, and then adjusting your work processes to meet those requirements and assigned organizational goals. It also includes measuring, monitoring and continuous feedback to your customers, suppliers, and those working in your process.



**WORK AS A PROCESS:** Your work is part of an interrelated process

Your work efforts are part of a process, not an isolated event. The critical part of any process is for each individual - whatever role they are playing - to ensure what they are doing *adds value* to the ultimate product, service, or information that is the output of that process.





## OTHER KEY QUALITY CONCEPTS (CON'T)

### **RIGHT THINGS RIGHT:** Meeting our customer's needs

Doing the Right Things Right is the target for our Quality efforts. In trying to accomplish that, our work efforts can generally fall into one (or more) of the following categories:

**Right Things Right** - Things we should do and we do well

**Right Things Done Wrong** - Things we should do but don't do well

**Wrong Things Done Right** - Things we shouldn't do but do well anyway

**Wrong Things Done Wrong** - Things we shouldn't do and do poorly

### **FIVE PILLARS:** Key elements of a Quality organization

A Quality initiative within any organization needs the following five "support" pillars:

**Customer Focus** - Aligning all your processes to meet customer needs

**Total Involvement** - Getting everyone involved in improving processes

**Systematic Support** - Aligning organizational systems with Quality principles and practices (i.e. budget, evaluations)

**Measurement** - Establishing performance requirements and monitoring

**Continuous Improvement** - Never settling for "good enough"

## OTHER KEY QUALITY CONCEPTS (CON'T)

### **COSTS OF QUALITY:** Necessary and avoidable costs of Quality

Costs of Quality can account for as much as 30% of a budget. Some of these costs are avoidable (rework) and some are necessary (training). Types of costs associated with Quality might include:

#### **INTERNAL FAILURE**

Costs of failing to do it right the first time

#### **EXTERNAL FAILURE**

Similar to above, but also costs to investigate complaints and penalty payments, etc.

#### **APPRAISAL**

Costs to see if we did it right the first time (inspection)

#### **PREVENTION**

Costs of trying to ensure we do it right the first time (quality)

#### **INDIRECT**

Price paid by customer to fix what we didn't do right the first time

### **STRATEGIC QUALITY GOAL:** Coast Guard-wide goal for Quality

**We will deliver high quality service to the American Public by all Coast Guard people continuously improving our processes to meet the ever-changing needs of our customers.**